

10

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-68 are pending in this case, of which claims 1-15, 17-24, 29, 34-35, and 37-55 are now canceled. Claims 16 and 25 have been amended. Claim 69 has been added.

Claim Objections – Informality

The Examiner has objected to claims 25-28 and 30-31 because of an informality, in that in claim 25 the limitation "said first optical layer" lacks antecedent basis. Claim 25 has been amended so that the phrase "said first birefringent layer" replaces the phrases "said first optical layer", thereby providing the correction required by the Examiner.

Claim Rejections – 35 USC § 102

The Examiner has rejected claim 37 under U.S.C. 102(b) as being anticipated by Rehorn in U.S. Patent No. 2,883,906. Claim 37 has been canceled.

Claim Rejections – 35 USC § 103-- Kleinberger

The Examiner has rejected claims 16, 25-28, 31-33, 36 and 56-65 under 35 U.S.C. 103(a) as being unpatentable over Rehorn in view Kleinberger et al., U.S. Patent No. 5,822,117. Claims 16 and 25 have been amended.

Regarding claims 59-62, the Examiner states that Rehorn "discloses a display (18) for displaying a uniformly polarized combined image of left and right picture elements of left and right images (see fig. 1); a birefringent layer (5) being positioned in front of said display (fig. 5) and serving for re-dividing said uniformly polarized combined image by controlled partial light rotation (column 4 lines 10-16), thereby constructing an image having superimposed left and right image picture elements of left and right images, respectively, in which superimposed light of said left image is polarized differently from superimposed light of said right image (column 3, line 20 – column 4, line 16); light of said left image displayed in adjacent picture elements is polarized differently and light of said right image displayed in adjacent picture elements is polarized differently (see fig. 2A); operable to present an image wherein light of said left image is polarized uniformly and light of said right image is polarized uniformly (column 3, line 20 – column 4, line 16)."

The Examiner's rejection is respectfully traversed. The Applicant requests to point out that the display system presented by Rehorn in the cited section does not in fact include "a display for displaying a uniformly polarized combined image of left and right picture elements of left and right images". The configuration presented in Rehorn's Figure 5 does indeed create on his display 18 a combined image as described in his Figure 1, yet that configuration does not include any display capable of displaying a *uniformly polarized* combined image of left and right picture elements of left and right images.

With respect to elements of Rehorn's display which might at first glance appear similar to a uniformly polarized combined image of left and right picture elements of left and right images, the Applicant requests to direct the Examiner's attention in turn to Rehorn's screens 4 and 4', 5 and 5', 6 and 6', and to Rehorn's display 18.

With respect to the components of Rehorn's system, and in particular his screens 4 and 4', it may be noted that Rehorn states in column 4 lines 8-9 that the images created by each of screens 4 and 4' is an image "cross-polarized in strips". Also, in column 2 lines 39-42 Rehorn describes screen 4 having polarizing elements or strips 36 with alternating polarizing directions indicated in Figure 2A by alternating horizontal and vertical arrows 8 and 9. Clearly, light traversing Rehorn's screen 4 is not and cannot be uniformly polarized.

In column 2 lines 43-49 Rehorn indicates that indicates that screens 4', 5, 5', 6 and 6' are similar in construction to screen 4, similarly having polarizing elements or strips 36 with alternating polarizing directions, as indicated in Figure 2A by alternating horizontal and vertical arrows 8 and 9. Thus, light traversing screens 4', 5, 5', 6 and 6' also is not and cannot be uniformly polarized.

With respect to Rehorn's display 18, Rehorn indicates in column 4 lines 4-16 that an image is formed on non-depolarizing projection screen 18 by projecting two images, each cross-polarized in strips by screens 4 and 4', onto screen 18 in superposition. It may be appreciated that the resulting image is clearly not uniformly polarized. In lines 13-14 of column 4 Rehorn indicates that the resulting composite projected image is formed as described by his Figure 1, which figure describes an image which is, by definition, not uniformly polarized. It may be further appreciated that since screen 18 superimposes two images, one projected from screen 4 and one

projected from screen 4', the polarization orientation of the projected image at any given pixel position on screen 18 will be a vector sum of the polarized light projected from screen 4 at that position and that projected from screen 4' at that position. We know by Rehorn's explanations that the *orientations* of the projections from 4 and 4' onto any given pixel position on screen 18 will be different from each other, for any given pixel position on screen 18, while the *intensity* of each of the projections onto that given position will be a function of the light intensities of the right and left images at that point. In other words, the vector sum of the additions of the projections on any given point is an unpredictable function of the specific left and right images so projected. For typical stereoscopic left and right image pairs the resulting combined image will clearly not be a uniformly polarized image.

Thus in the configuration presented in Rehorn's Figure 5, neither his display 18 nor his screens 4, 4', 5, 5', 6, nor 6', nor any other portion of his apparatus is a display operable to display a uniformly polarized combined image of left and right picture elements of left and right images as defined by claim 59.

Similarly, no portion of the devices discussed with reference to Rehorn's other figures is operable to present such a uniformly polarized combined image. In particular, Rehorn's screens 4, 4', 5, 5', 6, and 6' of his Figures 2, 3, and 4 do not do so, nor do the elements 18 and 7 appearing in Rehorn's various figures.

Thus, no display element producing a *uniformly polarized* image combining left and right images exists in Rehorn's teaching. This fact is most significant in practical terms, in that Rehorn's invention cannot be implemented by an efficient and compact configuration of liquid crystal elements, as presented in the instant application, precisely because whereas the instant application does comprise a configuration wherein left and right images are first combined in a single display

having uniform polarization (producible on a standard liquid crystal display), whereas Rehorn's configuration does comprise such an image, nor means for producing such an image.

In configurations presented by the instant application, a uniformly-polarized display combining left and right image information, preferably produced by a standard liquid crystal display, is viewable by an observer looking through a birefringent layer having individually switchable elements positioned between the observer and that combined display, and serving to re-divide the uniformly polarized combined image by controlled partial light rotation, thereby constructing an image having superimposed left and right image picture elements of left and right images, respectively, in which superimposed light of said left image is polarized differently from superimposed light of said right image. In other words, the invention of the instant application creates an image corresponding to that defined by Rehorn's Figure 1 by starting with a uniformly polarized image combining left and right image elements (as Rehorn's configuration does not), and by re-dividing that combined image into re-created left and right images by polarizing individual picture elements (pixels) to selected degrees (which Rehorn's configuration also does not do).

An image combining left image and right image information in a uniformly polarized combined image can be produced by a standard liquid crystal display. Thus, using a first liquid crystal display to display a uniformly polarized combined left-and-right image, and then using a second element which is a birefringent layer having individually switchable elements positioned between the display and the viewer and serving for re-dividing the uniformly polarized combined image by controlled partial light rotation, the invention of the instant application enables to produce a combined image in Rehorn's Figure 1 format, using a method and a device configuration not

anticipated nor suggested by Rehorn. The method and device of the instant application comport important practical advantages. Such a configuration enables to create the image of Rehorn's Figure 1 in a simple, thin, and compact liquid crystal display system.

Rehorn's configurations do not enable such a display. In sum, a key difference between Rehorn's configurations and devices presented by the instant application is the use of a combined left-and-right image uniformly polarized over its entire surface. Rehorn's configurations do not include such an element and therefore cannot be used to produce a 3D display of comparable simplicity and compactness. Consequently the Applicant submits that claim 59 and claims 60-62 depending from claim 59 are not in fact anticipated by Rehorn in view of Kleinberger.

Regarding claims 32-33, 36, 56-58, and 63-65, the Examiner states that "Rehorn discloses a system for autostereoscopic viewing (fig. 5) comprising (a) a first optical construction which comprises (i) a display (18) for displaying a uniformly polarized combined image of left and right image picture elements of left and right images (see fig. 1) wherein light intensity of each picture element of said combined image is a function of left-image light intensity at a corresponding position of a left image (3') and a right-image intensity at a corresponding position of a right image (3)...."

The Applicant believes that he has shown in detail hereinabove that display 18 of Rehorn's Figure 5 does not in fact present a uniformly polarized combined image, and that therefore (as discussed hereinabove with respect to claim 59) claim 32 and claims dependent from claim 32 are not anticipated by Rehorn's teachings.

With respect to claims 16 and claims 64-65 which depend from claim 16, claim 16 has been amended to include limitations similar to those discussed above

16

with respect to claim 32. Since amended claim 16 now includes the restriction that the "first optical construction" comprises a display providing a "uniformly polarized combined image....", the Applicant believes that amended claim 16 and claims 64-65 dependent thereon are now in condition for allowance, for the reasons discussed in detail hereinabove with respect to the absence in Rehorn's teachings of a uniformly polarized combined image and of means for creating same.

Regarding claim 25 and claims 26-28 and 31 depending from claim 25, claim 25 also recites a display for "displaying a uniformly polarized combined image of left and right image picture elements of left and right images". As discussed above in detail, Rehorn's configurations do not include such a display, and consequently do not anticipate the invention presented by the instant application and defined by claim 25. Consequently the Applicant believes that claim 25 and claims 26-28 and 31, depending from claim 25, are allowable.

Claim Rejections - 35 USC § 103—Kleinberger and Omar

The Examiner has rejected claim 30 under 35 U.S.C. 103(a) as being unpatentable over Rehorn in view Kleinberger et al., as applied to claim 25, and further in view of Omar et al., U.S. Patent No. 6,449,090 B1.

The Applicant notes that claim 30 depends from claim 25, which the Applicant believes he has shown, by the above arguments, to be allowable. Consequently the Applicant believes that claim 30 may also be judged allowable.

Claim Rejections - 35 USC § 103—Kleinberger and Morishima

The Examiner has rejected claims 66-68 under 35 U.S.C. 103(a) as being unpatentable over Rehorn in view Kleinberger et al. as applied to claim 65, and further in view of Morishima et al., U.S. Patent No. 5,875,055.

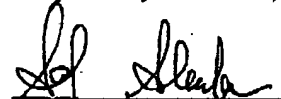
The Applicant notes that claims 66-68 depend from claim 16. Claim 16 has been amended. As discussed above, additional limitations have been introduced to claim 16, rendering claim 16 allowable, consequently claims 66-68, which depend from claim 16, should also be judged allowable.

New Claims

Claim 69 has been added. Support for claim 69 is to be found in the discussions of Figures 14-18 of the instant application, where consideration is given for various methods for causing one and only one pixel of a pixilated display to be optically aligned with one and only one individually switchable element of a birefringent layer. This arrangement is to be contrasted with the configurations presented by Rehorn, most clearly seen in his Figure 4, where each element of his layer 5 is optically aligned with two different picture elements, depending on which eye of a viewer is viewing the display.

In view of the above amendments and remarks it is respectfully submitted that the pending claims are now in condition for allowance. Prompt Notice of Allowance is respectfully and earnestly solicited.

Respectfully submitted,



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Encls.:

Three-months extension fee.

Request for Continued Examination (RCE)